The New York Times

MID-WEEK PICTORIAL



ARAB FLIBESMIN

How the Southern End of the Russian Line Has Advanced.



In this map the great areas occupied by the Russian armies south of Pinsk are projected in perspective. The heavy black line running from the Rumanian frontier of Bessarabia to the northern area between Lida and Minsk indicates the approximate position of the opposing armies before the Russian drive the district inclosed in dotted lines. As a basis by which to estimate these gains the distance from Dubno to Sokal, sixty-five miles, may be taken.

(Drawn especially for The New York Times Mid-Week Pictorial; © 1916.)

THE NEW YORK TIMES MID-WEEK PICTORIAL

I name has appeared so frequently in the war dispatches from the Eastern front during the last month, is in charge of the southernmost of the three Russian armies operating under the central direction of General Brusiloff. It is this brilliant leader who has pushed the Russian offensive against the Central Empires most successfully during the present campaign. General Letchitsky has been intrusted with the campaign in Bukowina, and the third week in July finds him pushing his outposts through the passes of the Carpathian Mountains. In other words, Bukowina has been cleared of the enemy. Further advance will bring his Russian army again onto the

plains of Hungary. General Lohvitzky, whose portrait appears below, is the commander of all the Russian troops in France. Press dispatches of the last week have recorded the fact that the Russian soldiers are now fighting in the trenches of Northern France. On the Champagne front the Russians withstood a surprise attack delivered by the Germans for the purpose of winning back ground taken in the French offensive. Of the six detachments of Russians landed in France five units, believed to number about 25,000 troops, are now known to be actively engaged on the lines opposing the Germans.



GENERAL LETCHITSKY (© Central News Photo Service.)







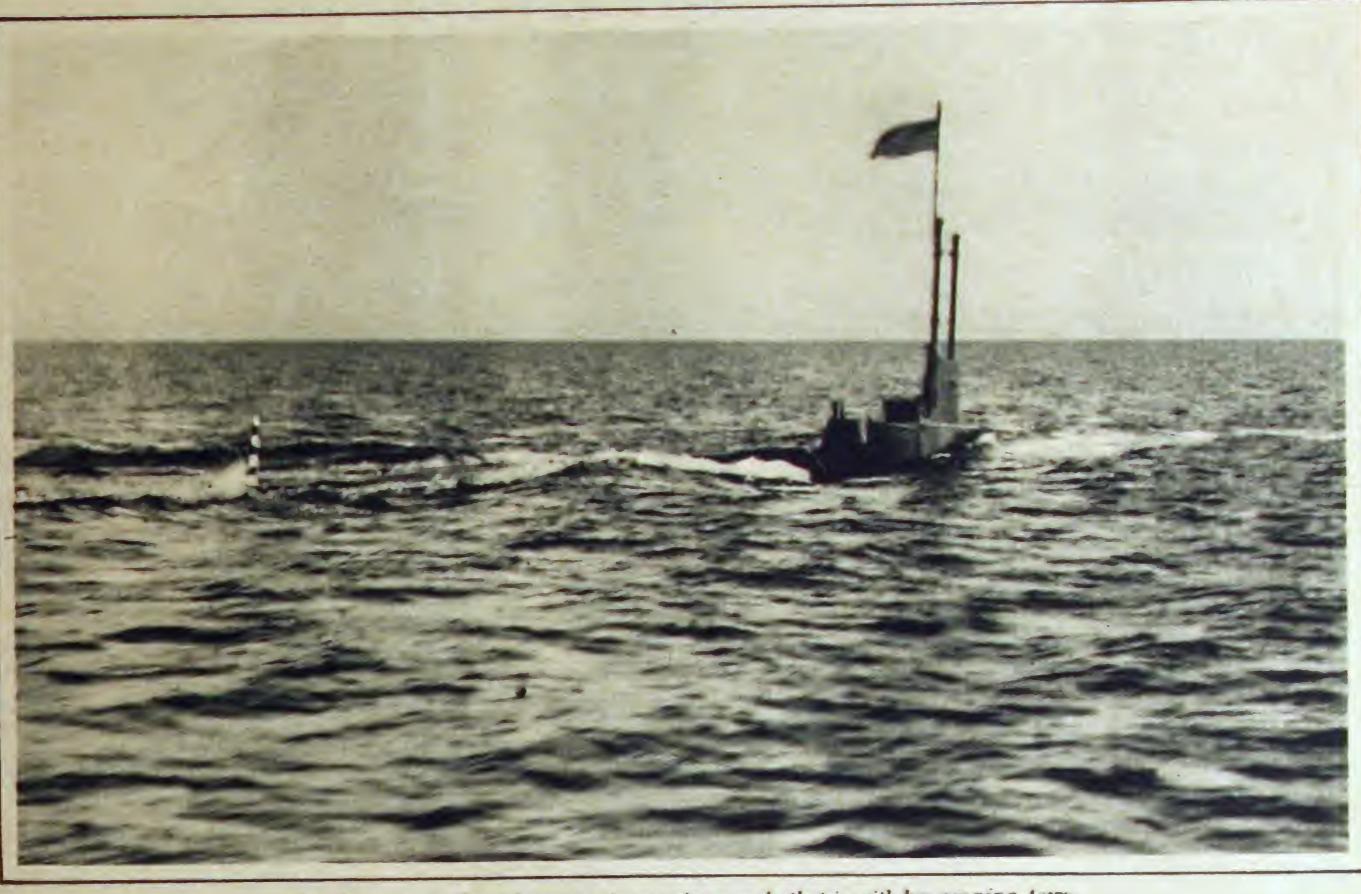
GENERAL LOHVITZKY (@ Underwood & Underwood.)



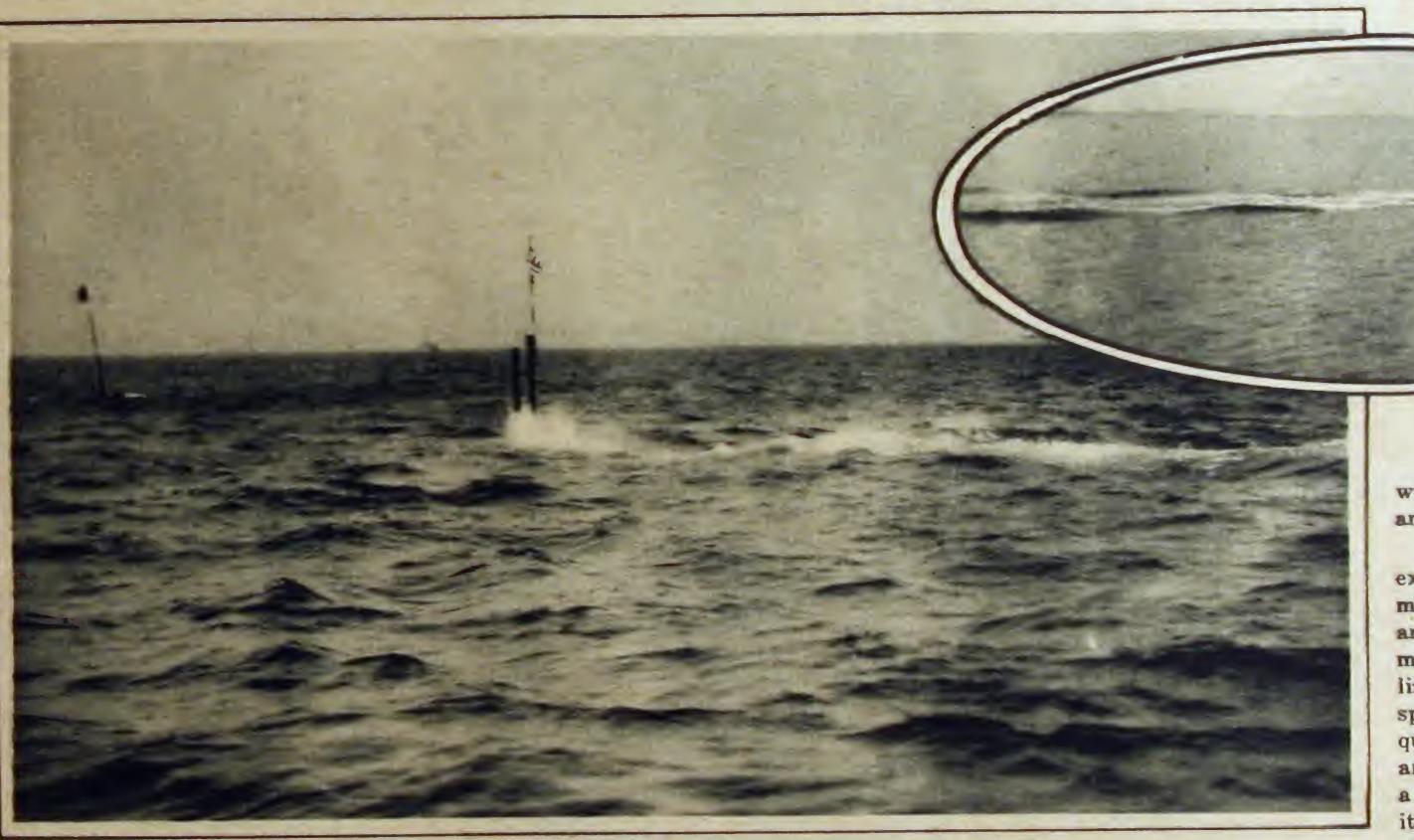
THURSDAY, JULY 27, 1916

The Working Principles of the Submarine By L. C. Speers

NLY a few days have passed since the now famous German submarine Deutschland, the first cargo-carrying submersible to cross the Atlantic, came up out of the waters off the Virginia Capes and announced her triumph to an expectant though surprised world. That the submarine possesses commercial possibilities that cannot well be overestimated has for a long time been the conviction of submarine engineers and other experts in submarine navigation, and to these few the record-breaking, historymaking feat of the great German underwater craft did not come as a great surprise. But to the world generally the arrival of the Deutschland in American waters proved one of the most sensationally interesting developments of the great war in Europe, for had it not been for the war the advent of the Deutschland would, without question still be a problem for the future to solve. Photographs published in our last issue showed what the Deutschland looks like from the outside; and also the appearance of the new American submarine, the M-1. Within the past ten days the wonderful new M-1 has had her trial manoeuvres off Provincetown. So it is that nearly everybody knows what a submarine looks like from



In this picture the submarine is running awash, that is with her comming tower above the water and with her deck level with the water's morface

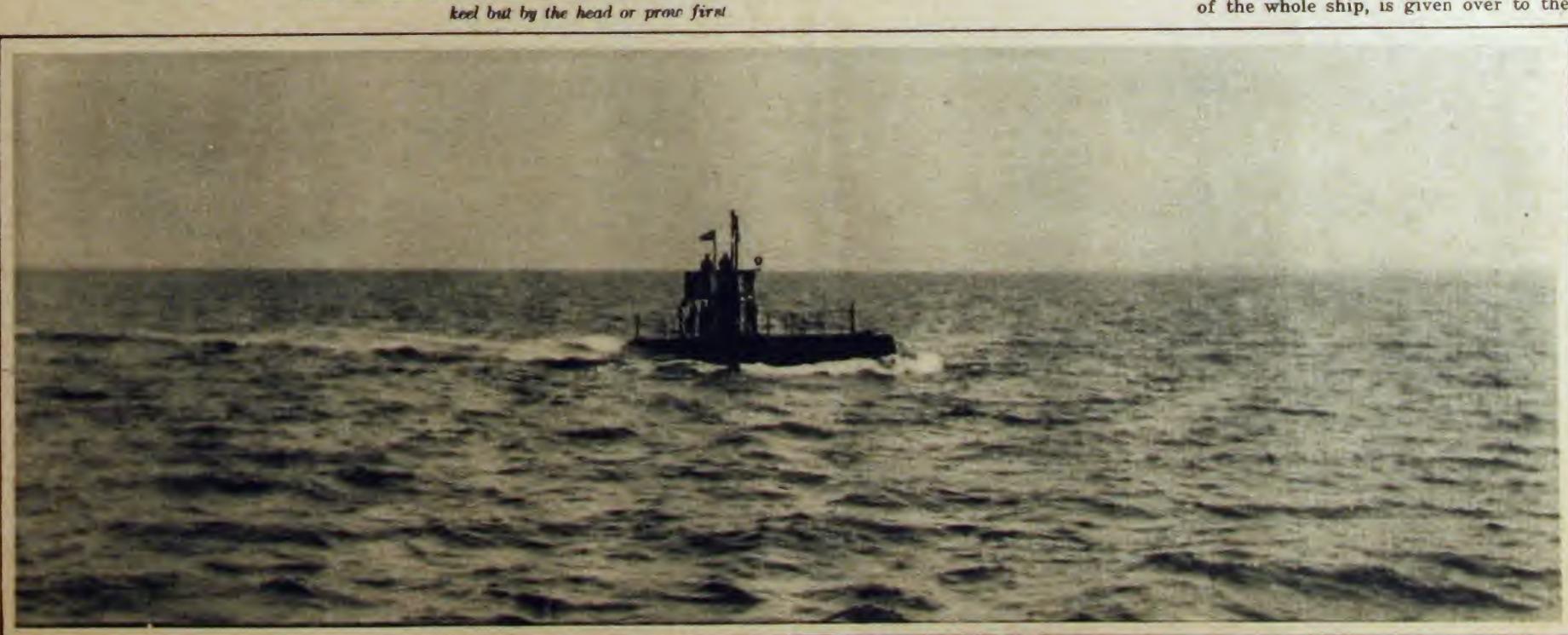


Here the submarine is diving: the boats do not go down on an even

Submerged; only the periscope of the submarine shows above water

without. But few know her appearance from within.

As an officer of the American Navy expressed it a few days ago, "there is mighty little room for loafing inside, and absolutely none outside of a submarine." Every inch of space is utilized, less than one-tenth of all the space being given up to provide living quarters for officers and men. Forward and aft are great water ballast tanks; a big compartment is stored to capacity with compressed air cylinders: another compartment, one-eighth the size of the whole ship, is given over to the



Partly emerged; the hatch in the couning tower has been opened and some of the crew have come out for a breath of fresh mr



At hunch in front of an officer's tent on the field.

who is known as a mascot for his army.

Photographed with his car and two favorite without

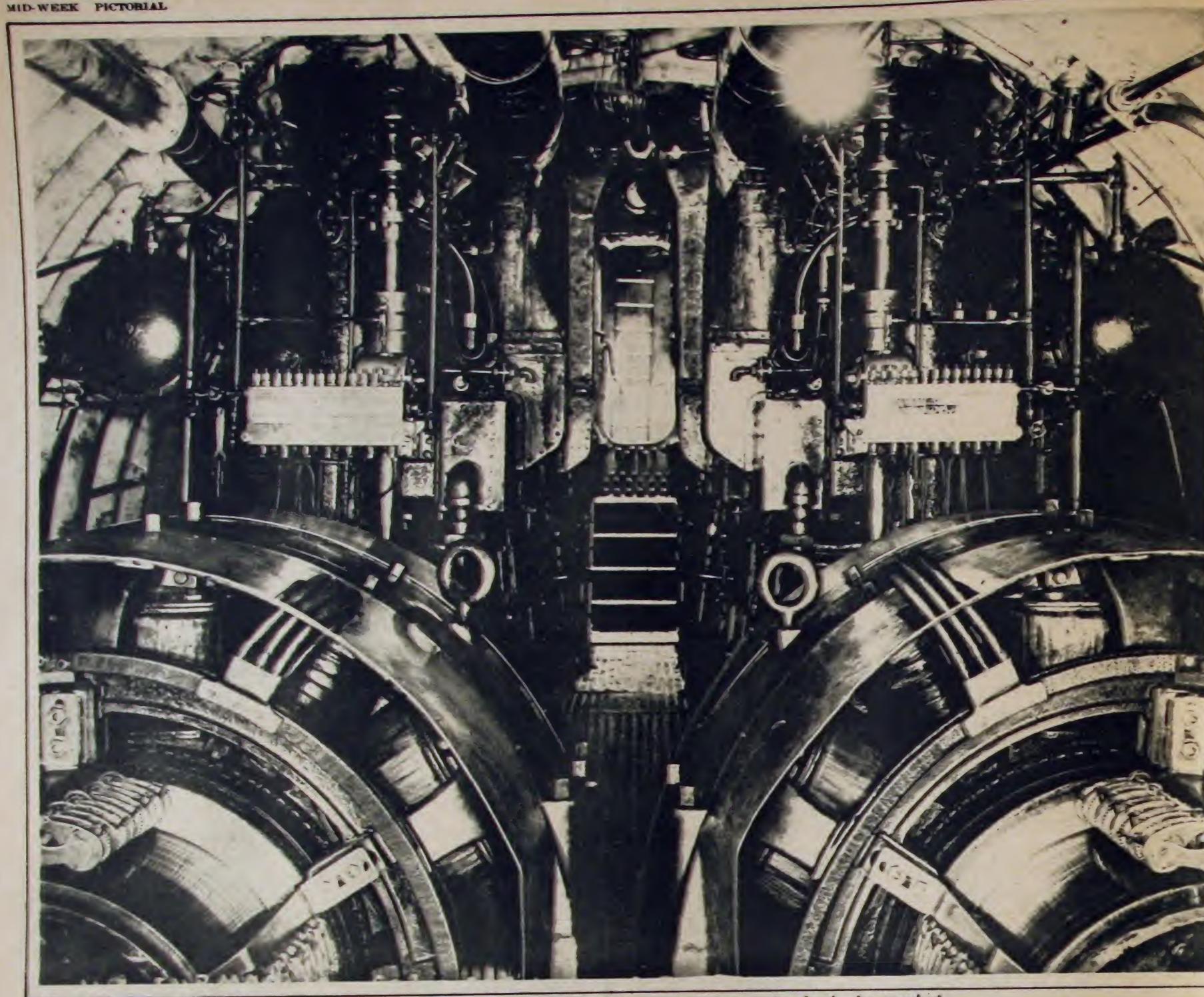
guished itself at Verdun are receiving from the

Crown Prince iron crosses and his congratulations



In an auto on a tour of inspection

THURSDAY, JULY 27, 1916



The interior of a United States submarine, from aft looking forward. In the foreground at either side are the dynamos for charging the storage hallery.

engines and the storage batteries; there is another compartment into which is crowded the wireless, the workshop, and the torpedoes; there is a big tank for the storage of heavy oil fuel, and another not so large where is kept the allessential supply of lubricating oil. In the very centre is the operating station, and from this station the periscopes go up and out into the air, the eyes of the ship, upon which every submarine manoeuvre absolutely depends. The torpedo tubes are forward and aft, and

in many of the new submarines also fitted into the sides of the craft. The conning tower, from which the commanding officer directs the navigation of the submersible when proceeding on the surface, leads up directly from the operating station.

The diagram accompanying this article shows a submarine of the 950-ton type and explains better than any written word can the complexity of everything that goes to make the modern submarine the wonder craft that it is

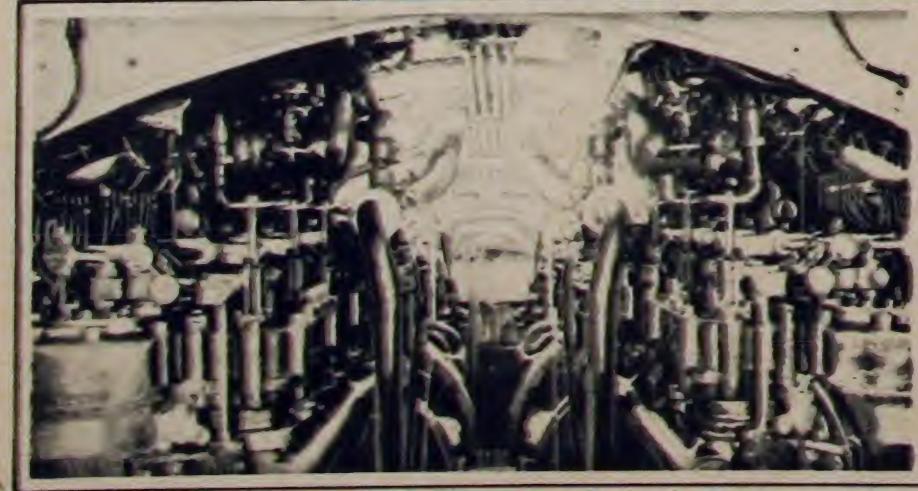
"What makes a submarine dive?" is a question asked over and over

Charles W. Domville-Fife, the submarine engineer, answers that question in understandable language in his book, "Submarine Engineering of Today."

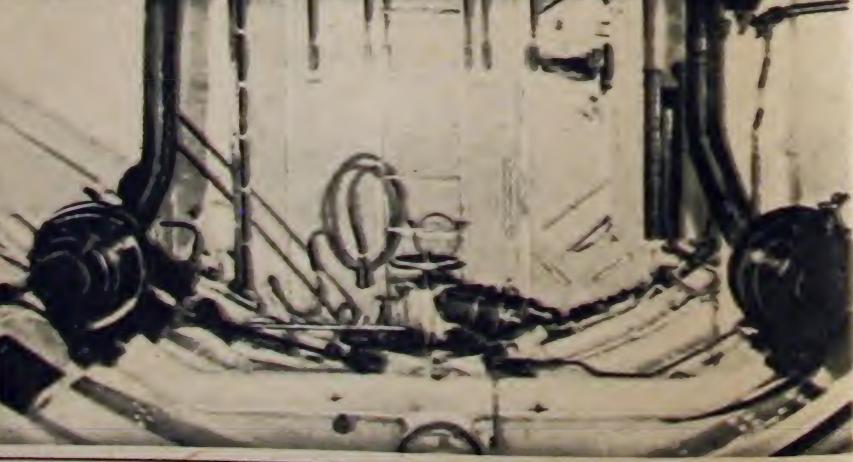
"When a submarine is traveling on the surface," says Domville-Fife, "she is in what is technically called the light condition; that is to say, with her water ballast tanks empty, but when it is required to sink her so that only the tiny

platform, or deck, and conning tower are above the surface, water is let into these ballast tanks and the additional weight causes her to sink into the sea until her back is almost flush with the surface; this is known as the awash condition. * * * To many it may appear strange that total submergence is not accomplished by letting still more water into the ballast tanks but entirely with the aid of the propellers and rudders.

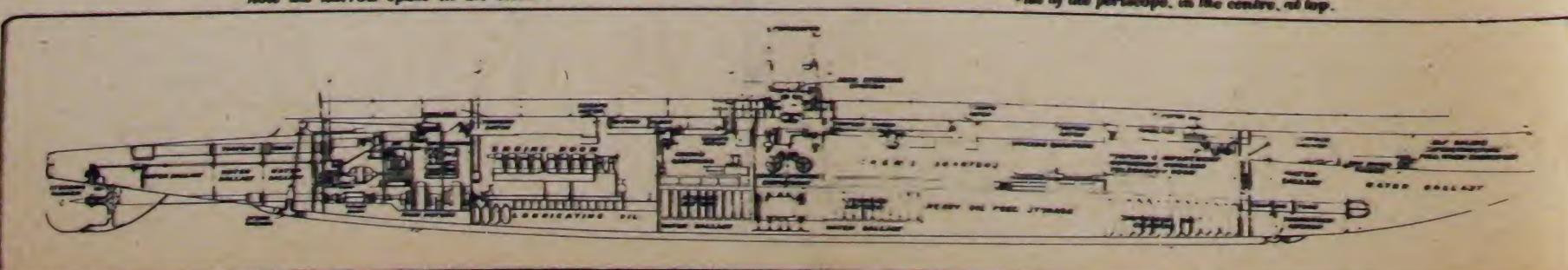
"A submarine has two, and sometimes



The engine-room of an American submarine, showing the oil engines; note the narrow space in the centre.



The dation of the commanding officer, choosing the interner and of the persoope, in the centre, at top.

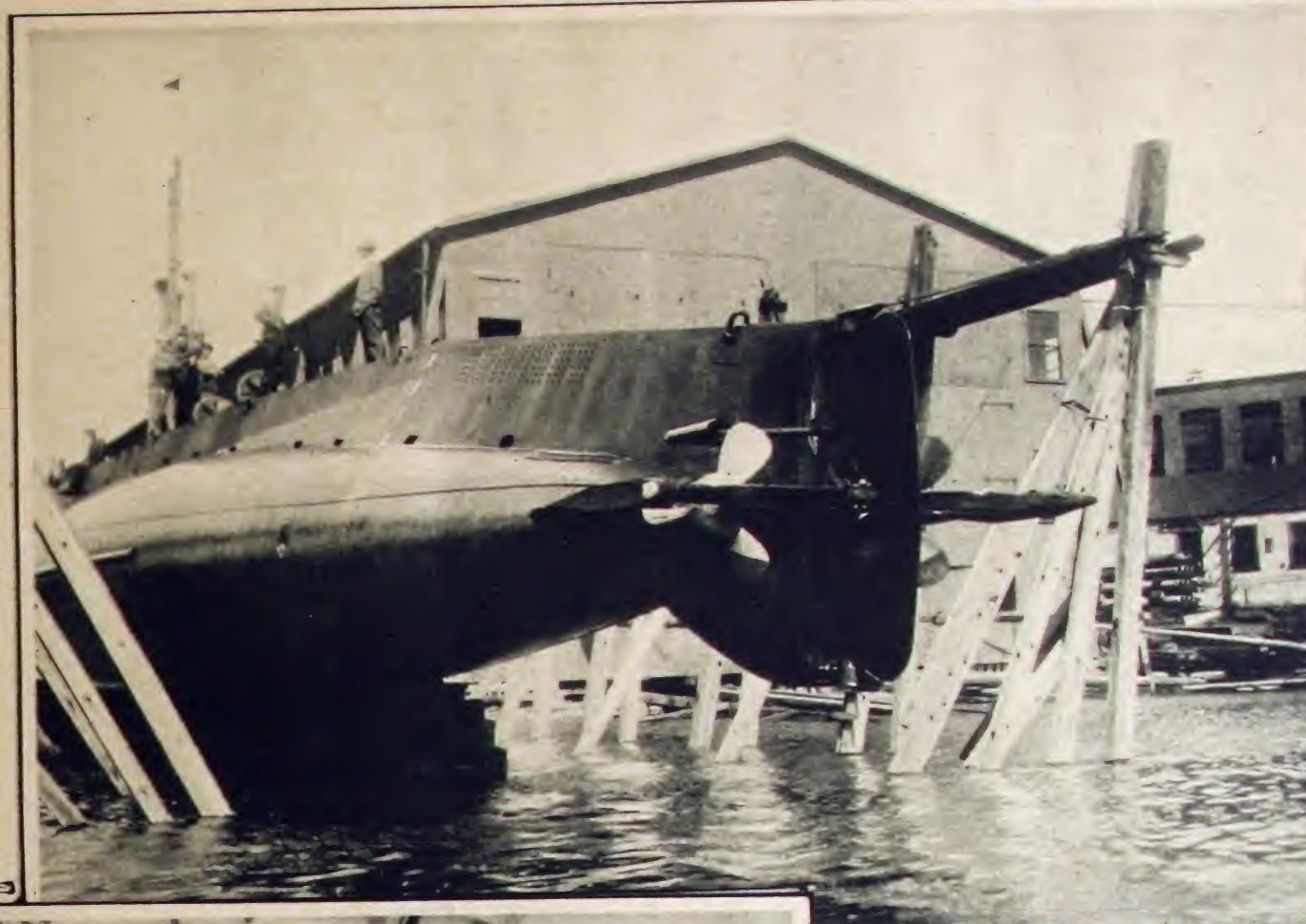


LENGTHWISE SECTIONAL PLAN OF A 950-TON SUBMARINE OF THE HOLLAND TYPE.

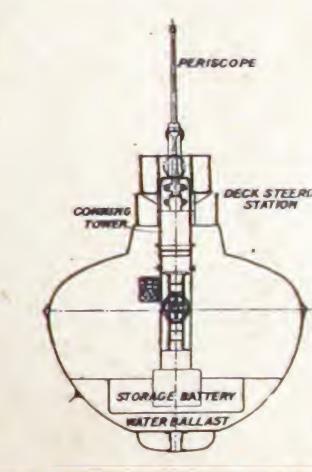
three, pairs of rudders; one pair, of ordinary vertical ones, to guide her to port or starboard, and a horizontal pair to cause her to dive and to rise. In order to make the submarine dive beneath the surface, the horizontal rudders are deflected when the boat is proceeding at full speed. The action of the water against the rudders is such that the bows are forced down and the whole vessel slides under the surface. The principle is much the same as that of steering an ordinary surface vessel where the force of the water against the rudder causes the vessel to swing to right or left. From this it will be seen that a submarine is only held beneath the surface by the action of her rudders on the passing water. Should the propellers driving her along cease to revolve and the vessel slow down, she automatically rises to the surface because the rudders have no longer any effect."

The steering apparatus on practically all submarines is operated by electricity since it is beyond the strength of any ordinary man to move the various rudders as the occasion constantly demands.

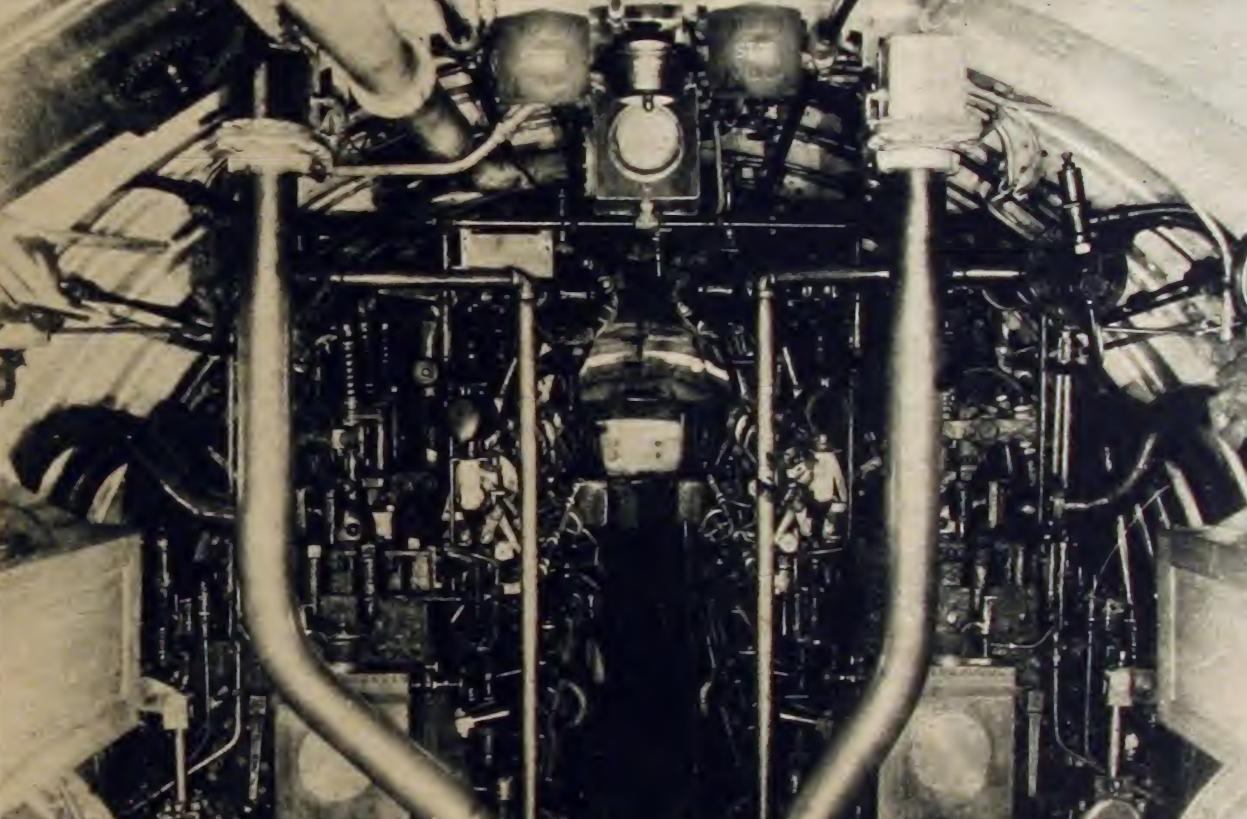
In practically all submarines there are three separate engines, the oil or



The stern of a submarine, showing the horizontal rudder which makes the submarine dive; also the propellers and usual vertical rudder.



A cross-section at the exact center of the submarine, shown in plan on the bottom of the opposite page.



Another view of th interior of an American submarine, taken from amidships, looking aft, and showing the crowded engineroom.

petrol motor which drives them when on the surface; the engine which makes the electricity for the storage batteries, and the electric mechanism which drives the craft when submerged. Besides there are other little engines needed in the compressing of air which is used

to charge the torpedo tubes and which

is the propellant that discharges the torpedoes, the motors to operate the

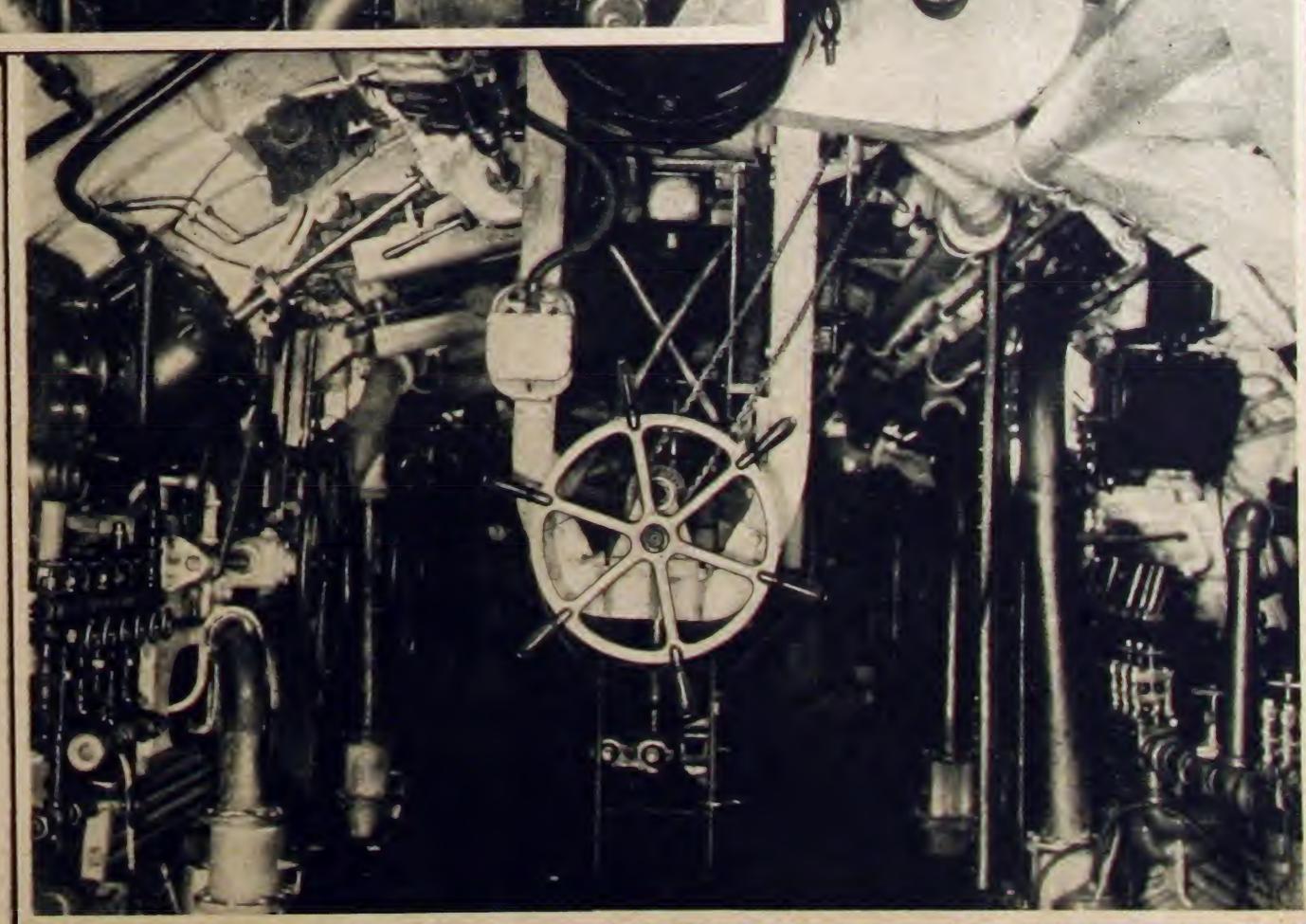
pumps, the steering mechanism, &c.

The eyes of the submarine are the periscope. All modern submarines are now fitted with two or three periscopes. These periscopes are long metal tubes extending from within the submarine to any desired altitude above the water. By the use of lenses and reflectors a picture of the surface of the water and whatever may be upon it is shown on reflectors within the vessel, and it is a picture that never falsifies; that is why the torpedo when properly aimed strikes

And where does the fresh air for the men within the shell come from? It may be derived from cylinders of compressed air or it may come from oxylithe containers. The carbonic acid gas of the respired air in the craft is chemically absorbed and thus rendered harmless.

L. C. Speers.

true nine times out of ten.



From amidships looking forward in the same submarine as the one just above, showing the wheel and the steering year.

HOW THE BRITISH TOOK LA BOISELL IN THE GREAT FRANCO-BRITISH DRIVE





This panoramic photograph shows the scene of the successful British advance at Boiselle. The picture was taken from the original British first line trench, which



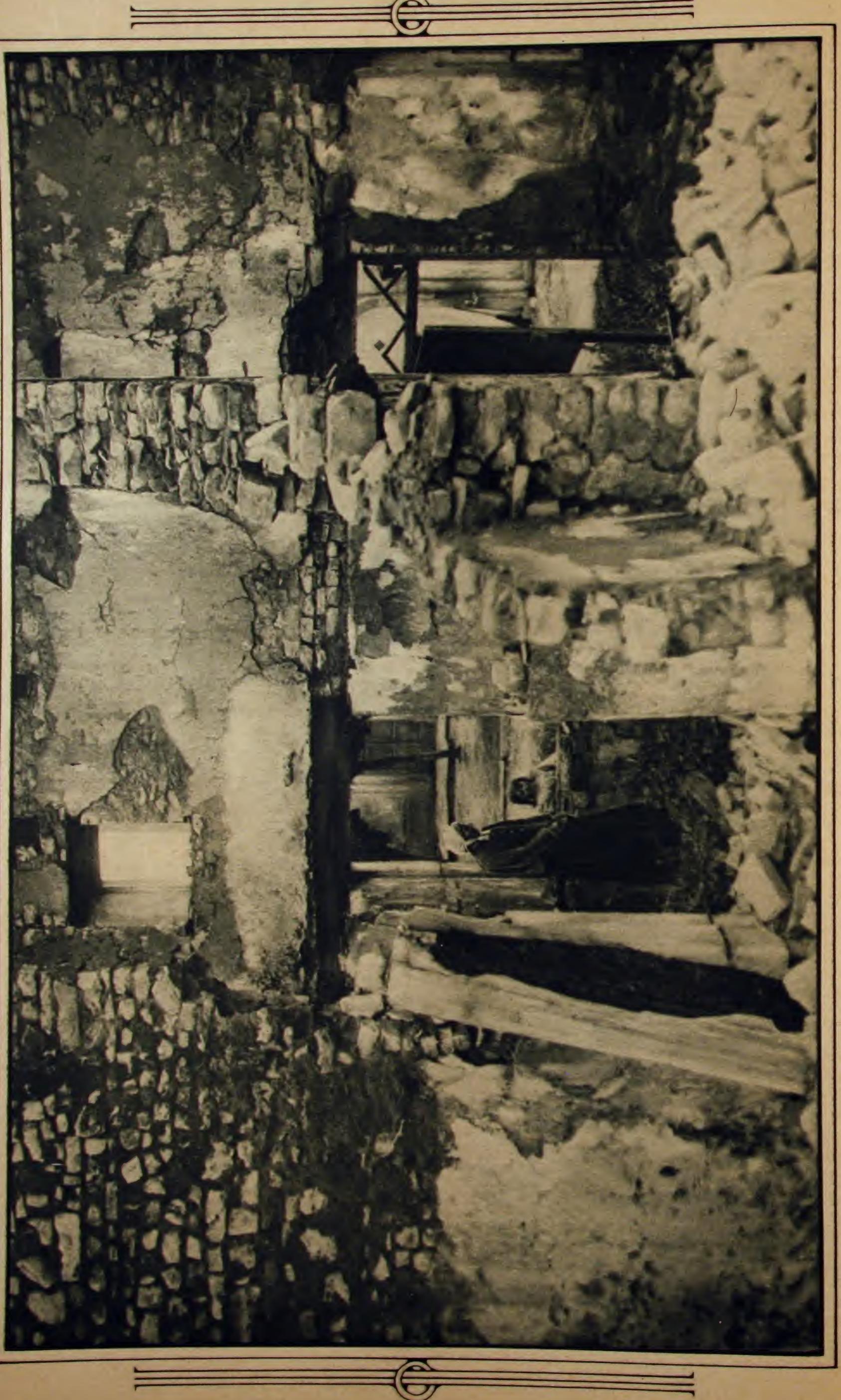
THE BEGINNING OF THE ASSAULT. EA



be seen in the foreground. In the center can be seen a crater caused by a mine explosion just before the assault; shells may be seen bursting over the advanced positions.



ON THE MORNING OF JULY FIRST.



D * ir 0



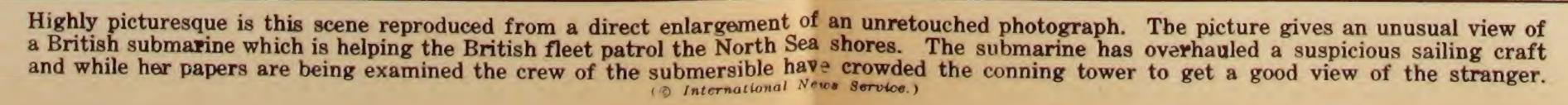
One of the new French guns on its way to the front, showing the specially built cars on which the French transport these huge pieces of artillery.

fortress on rails is in use in the neighborhood of Verdun.

The British Submarine On Patrol in the North Sea



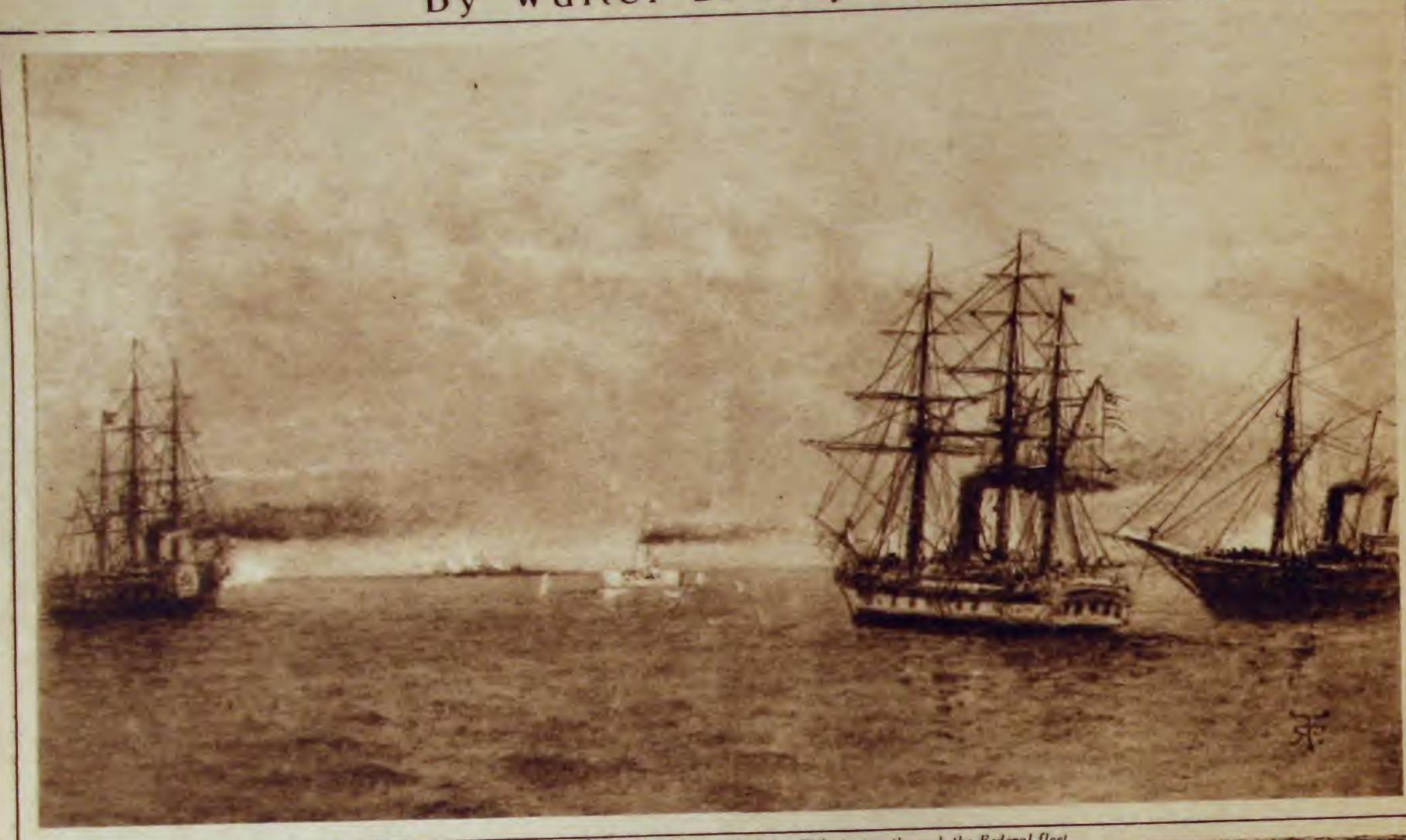






THURSDAY.

Blockade Runners of Other Days By Walter B. Hayward



The blockade runner, Will-o'-the-Wisp, makes a dash for Wilmington through the Federal fleet. whose fire is answered by the Consederate shore batteries.

aumg cordon with vessels that travel on the surface; hence the dramatic appearance of the undersea cargo boatthe little steamers that ran the Federal probably the most interesting merchant craft that has crossed the Atlantic since ern States from South Carolina to the first passenger steamer made her memorable ocean voyage in 1819. It is doubtful whether the hard-headed German shipowners of Hamburg and

Bremen have any illusions regarding the practical side of their problem. They have only to read the history of the civil war blockade to realize that a very large fleet of submarine cargo carr'ers will be necessary if Germany is to be supplied with the food and munitions she needs most. Nevertheless, their enterprise appeals to the imagination and bids fair to rank with that of the bold sailors who ran their ships so successfully to the Southern ports, but could not carry enough supplies to keep the Confederacy alive.

The effort to strangle the Confederacy by exerting economic pressure began April 19, 1861, when President Lincoln proclaimed a blockade of the South-Texas. He extended the blockade to Virginia and North Carolina on April 27, and although it was necessary to improvise a navy to patrol so extensive a coast line, within a few months the Federal cruisers had become numerous enough to close the larger Southern ports to sailing vessels.

The reasons for the blockade were logical. The Southern States virtually had no facilities for manufacturing supplies for the Confederate armies, but in cotton they possessed a valuable commodity which would buy guns, ammunition, and all :nanner of war material. English mills needed Southern cotton in great quantity; the South needed a Colonel William Lamb, the Confederate comsteady flow of English guns and war



mander of Fort Fisher, guarding the road to Wilmington

but modern long-range guns and accuracy of fire have finally eliminated the possibility of breaking through a block-

ERMANY'S submarine blockade

blockade during the American civil war

and succeeded in carrying supplies to

the Confederates almost up to the last

days of t'e conflict. But the two types

have this much in common: Both were

evolved to meet a situation which baf-

fled all ot'er craft, and both represent-

ed a departure in the science of naval

architecture—a science, by the way,

that rever seems to be at a loss for the

answer to some specific marine prob-

lem. And if the Deutschland and her

successors have a fair measure of good

luck they should, like the civil war

blockade runrers, bring huge profits to

their owners, for the game, or the trade,

if you will, is highly profitable in pro-

In the civil war speed and the re-

sourcefulness of the blockade runner's

master and pilot were the factors which

counted most in eluding the vigilance

of the hostile cruisers that guarded the

Atlantic Coast and the Gulf of Mexico,

portion to the risks it involves.

runner Deutschland is a much

different type of vessel from

Lieut.-Commander John Wilkinson of the celebrated Confederate blockade runner.

Robert E. Lee.



The Banshee II running the gauntlet of the Federal blockading squadron off Galveston in daylight

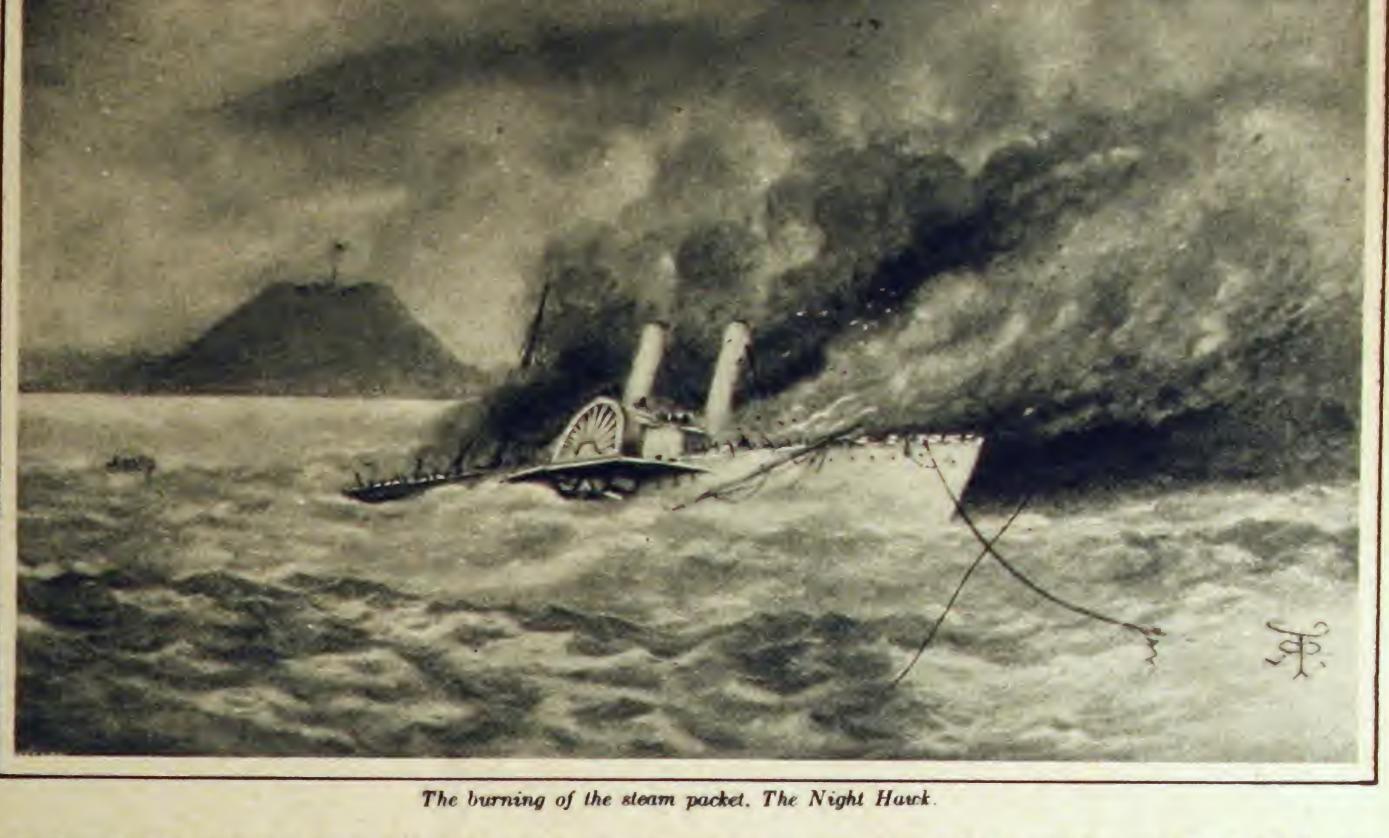
munitions. The blockade runners undertook to supply both needs.

At the outset blockade running direct from England was attempted, but a limited experience showed that this method could never be successful. Then the plan of transshipment was adopted, and numerous companies were organized in England to build blockade runners. Meanwhile bases were established at Bermuda, Nassau, in the Bahamas; and Havana. Large vessels brought cargoes from England to these ports, where the merchandise and munitions were transshipped to the actual blockade runners. which, in turn, discharged their cotton at the base, after the round trip.

The blockade runners were built of iron, and sometimes steel, and although these were the days of paddle wheels, not a few of the little vessels were propelled by twin screws. They drew but nine or ten feet of water, and thus were able to go close inshore when chased: their freeboard was low, and they had a turtleback or hood over the forward deck to throw off the sea-a device retained in fast motor boats of today. The tonnage of the blockade runners varied from 100 to 900, and they could make 14 knots, which was somewhat better than the speed of the average Federal

"Low visibility" was desirable even in the civil war, and to attain this the blockade runners were painted a drab color and had funnels that could be telescoped and hidden at will. No heavy rigging was allowed on the masts, but each vessel had a crow's nest for the lookout. All lights, even the binnacle lamps, were screened; boats were stowed below the level of the rail, the steam exhaust was beneath the water, and therefore noiseless, while cocks were never carried in the poultry crates because they were bound to crow when they smelled land, and perhaps would attract the attention of a hostile cruiser hidden in the mist near by.

While most of the blockade runners were British built and manned, the Confederate Government had several vessels of its own, commanded by naval officers, not the least of whom was Captain John Wilkinson, master of the Robert E. Lee, with which he ran the blockade twenty-six times, taking in quantities of war supplies and carrying abroad between 6,000 and 7,000 bales of cotton, valued at \$2,000,000 in gold. A number of the British runners were commanded by English naval officers on furlough. They took the precaution to travel under assumed names, for it would have made trouble between Great Britain and the United States had they been caught and identified. Among these adventurous officers were "Captain Roberts" of the Don, who later became Hobart Pasha of the Turkish Navy; Murray (Admiral Murray-Aynsley) Burgoyne



and Hewett, both Victoria Cross men, States troops, although Wilkinson did and many others.

Charleston and Wilmington were the But he became suspicious because his chief Atlantic Coast ports which the signals had not been answered, and good seamanship.

Captain Wilkinson, an extraordinarily away. capable shipmaster, ran the Wilmington The American Navy knew pretty well blockade twice after that city had been that "Captain Roberts" was a British captured, and got out again safely. He officer, and made strenuous efforts to was then in command of the Chameleon, cap'ure him. They did capture the Don. which was guided across the New Inlet and when the boarding officer reached

blockade runners tried to make. About promptly put to sea again. The next fifty hours after the vessels left Nassau night Wilkinson tried again, and picked or Bermuda sights were taken to enable up the range lights, which seemed to be them to make the final run to port, the set accurately. But when he tried to attempt being made just before daylight communicate with shore there was no of the third day. This was the most Confederate officer to answer his sigthrilling and anxious part of the voy- nals, and he knew the game was up. age, requiring extreme vigilance and Once more he ran to sea, with two cruisers at his heels, and finally got

not know that they were in control.

Bar by the camp fires of the United her deck he said: "Well, Captain Rob-

erts, so we have got you at last." But the man he addressed was not Roberts. He had given up command of the Don just before she sailed on the voyage that ended in her becoming a prize. Thomas E. Taylor in his book, "Run-

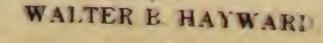
ning the Blockade," relates many adventures with the cruisers that lay in a semi-circle outside the entrance to the port of Wilmington, and just beyond the range of the guns of Fort Fisher. whose Commandant, the famous Colonel William Lamb, snatched many vessels "from the very jaws of the blockaders." Once Taylor's vessel, the Banshee, was attacked by three cruisers and got away, though somewhat damaged, and on another run she escaped after a chase by the cruiser James Adger that lasted fifteen hours and covered 200 miles. Finally the little steamer's mainmast, bulwarks, and deck cabin were burned, as well as a quantity of turpentine and cotton.

The high prices paid to the crews of blockade runners secured the best type of seamen. The wage scale in gold for the run in and out was as follows: Captains, \$5,000; chief officers and chief engineers, \$2,500; second and third officers, \$1,250; able seamen and firemen, \$250. The Southern pilots got \$3,750. and were really members of the crew.

Astonishing profits were made by some of the vessels, and the loss of a blockade runner after two successful voyages did not necessarily mean a monetary loss. Eight successful round trips by the Banshee paid her shareholders 700 per cent. on their investment, according to Taylor, while proportionate profits were made by many other boats, although some had bad luck and were either captured or lost on the first

The chief ports which blockade runners tried to make on the Atlantic Coast were Charleston and Wilmington. The latter was the favorite rendezvous, for it was guarded by the famous Colonel William Lamb, Commandant of Fort Fisher, who kept the Federal gunboats at a distance and evolved a system of signals that proved to be invaluable in guiding the blockade runners into port.

Dark nights were always chosen for the voyages. About fifty hours after leaving Bermuda or Nassau the blockade runner would be in the vicinity of the scout cruisers attached to the blockading squadron. The final run to port was made just before daylight of the third day. That was the thrilling and anxious part of the voyage. Keen eyesight was necessary to pick up the lights and landmarks on shore; extreme vigilance and good seamanship alone en abled the blockade runner to find in the line of cruisers the gap that offered the road to a safe anchorage.





The Confederate blockade runner Robert E. Lee.



The celebrated chase of The Banshee by the cruiser James Adger; it was a fifteen-hour race, which the Confederate hant won

With Men of the Dominion on the Western Front



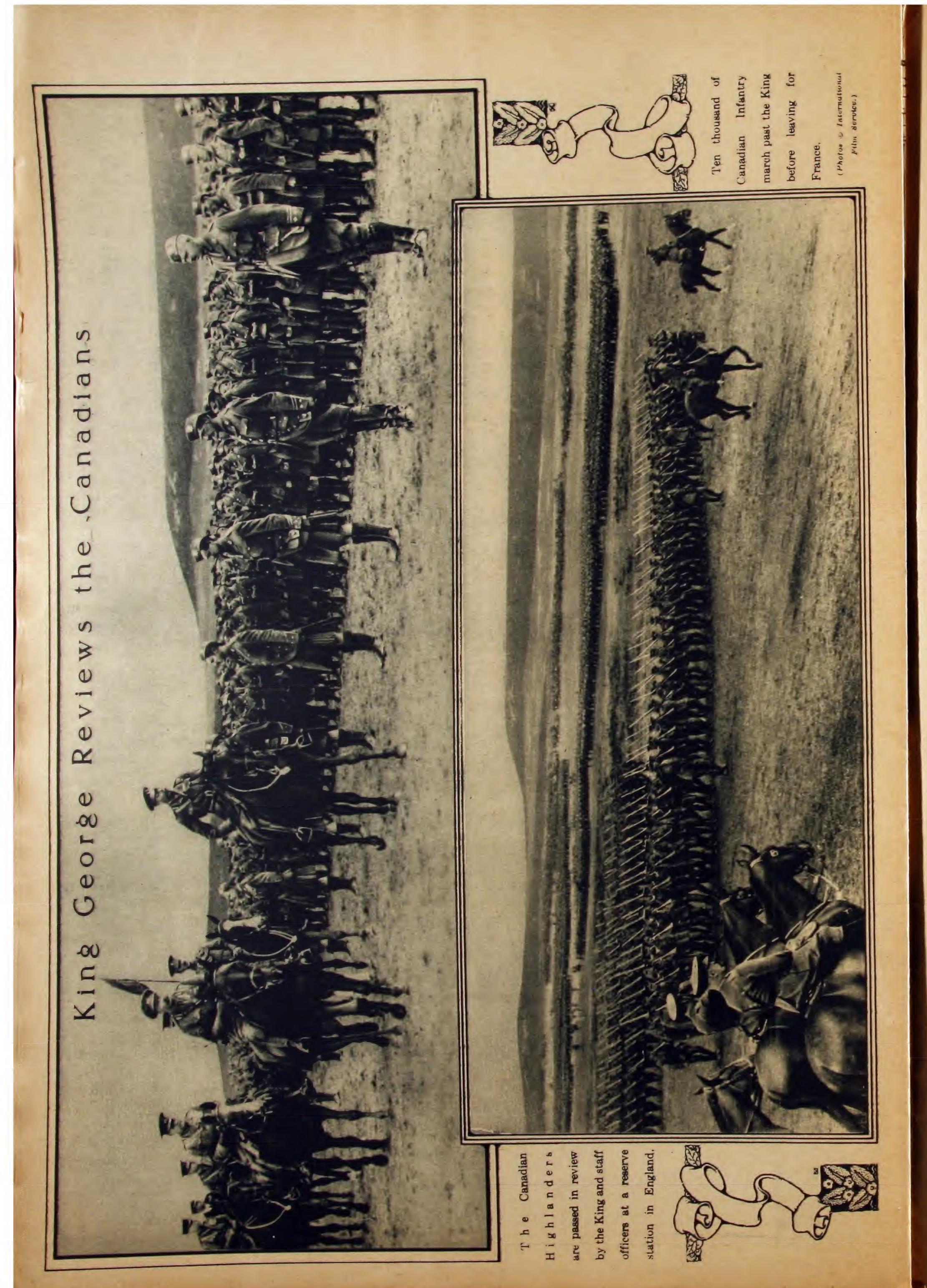
Near Fricourt; bringing out the wounded Canadians.

(American Press Association.)



Canadian types—men of the Grenadier Guards—the largest and the smallest.

(Dominion News Service.)



Where Austrian and Italian Armies Battle Amid Beautiful Scenery







An Italian army doctor in the midst of Austrain prisoners.

(At top) The Logarina valley, looking toward Rovereto—the scene of an

Austrian offensive in the Trentino.

(Below) The war on the heights of the Alps. Italian Alpini filing off toward Monte Adamello.

(Official Italian War Photographs.)



After a furious engagement at the foot of the Carso.







guns of 15-cm. captured by the Austrians at Campomolon.

(At top) During the Austrain offensive in the Trentino; Italian reserves waiting to reinforce the main line.

(Below) This trench marks the furthest advance of the Austro-Hungarian troops in their Italian offensive.



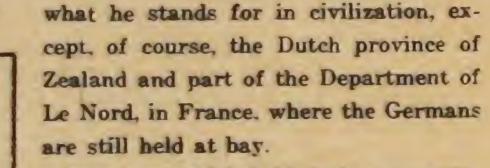
An Austrian light mountain gun in position on a high peak.

JULY 27 1916



In the early months of the great war the German Armies rolled over Flanders without crushing it, and soon it rose again, just as flowers do, from the soft turf after a field roller has passed. But the flowers of Flanders, as they rose again, were not left to grow freely as before—they were pruned, trained, and their stalks grafted by the German Civil Administration, which came after and settled down

Along the canal between Bruges and Muhlenberg; a German sentry post what he stands for in civilization, exist on the canal gate.



Flanders, which held such a romantic position in the wars and literature of the Middle Ages, was once an autonomous country ruled by a line of Counts under the suzerainty of the French Kings. It developed a language and a literature all its own, industries which were the marvel and envy of all Europe, and a school of painting unequaled in the history of art.

As sooner or later the German soldiers, who, along this thirty-five mile line, are keeping the Belgians from recovering their own, may become suddenly active in defensive or offensive operations it may be interesting to know their identity.

The same mercantile submarine, which brought a number of pictures showing how these soldiers live amid the dunes, the drained dikes, and the dikes which are not drained, also brought information concerning their organization.



German marines firing at the enemy from the Belgian sand dunes.
(Central News Photo Service.)

which cuts off a little corner of the Belgian province of West Flanders, still defended by the French from Nieuport to opposite Dixmude, by the last of the courageous little Belgian army from near Dixmude to just north of Ypres, and from Ypres down into France by the British.

Only about 300 square miles of Flanders is thus free from the German and



A German position, highly organized at the very edge of the real for defense, in the Flanders dunes, Photos. Underwood & Underwood.



A meeting off shore of the German torpedo boats patrolling the Belgian coast.

The operations of the whole front are directed from Roulers, fifteen miles back of the line and twenty miles south of Bruges. Roulers, which made a fine linen before the Germans came in, has the appearance of having wandered about a great deal and then settled down because it had no place else to go, and then fastened itself to the earth by the Gothic tower of St.

The entire Belgian coast is protected from English warships by carefully sown mine fields.

Michaels. In time, it made history and began to have memories, one of the most cherished of which to the present silent inhabitants is that of the battle fought there on June 13, 1794, when the French, under Pichegru and Macdonald, defeated the Austrians under Cleriait

So from Roulers go the orders to the commands on the front, and from the front along the beaches and dunes to Ostend. Along this shore are sta-



A veritable sand-hill fortress built by the German reserves in the dunes along the Flanders coast.

(Central News Photo Service)



Over the dunes to Wenduyne, in Flanders, goes this company of German marines.

tioned the naval corps of Werder and von Basedow, who have several guns at Middlekerke and Lombartzyde, which are to keep off the British monitors when, from time to time, they attempt to enfilade the front when it retreats from the sea within range of the long-silent French naval guns at Nieuport.

After the German naval corps the defense is taken up by the Thirtyseventh Landwehr Brigade and the Second Ersatz (substitutes) Brigade. Then, enveloping Dixmude, noted before the war for several masterpieces by Urban Taillebert and Jordaens, comes the Fourth Ersatz Division, and next to it two full army corps, the Twenty-sixth Reserve Corps, whose trenches lie northwest of Zonnebeke, and the Thirteenth Active Corps, covering the British salient at Ypres, which the Germans tried to reduce on June 2-3 at the cost of many Canadian lives. And somewhere in the fields, three miles southeast of Bruges, under canvas is the 123d Division kept in reserve.

What part this front in Flanders is



German sailors and soldiers in Flanders have established many recreation centres, one of which, in the little town of Snaeskerke, is here pictured.

(Photos from Underwood & Underwood.)



A German machine gun detachment saluting as it passes an officer's house, on its
way through a Belgian coast town.

(Central News Photo Service.)

destined to play in the great Franco-British offensive now going on sixty miles south of the frontier can hardly be conjectured at present. Almost every day or two the three German destroyers which, in addition to two or three submarines and several mine-layers, which form the naval strength at Zeebrugge, play hare and hounds with the British monitors and their protectors, the destroyers. The object of the British is to "cut out" the enemy craft, while that of the German is to lure the monitors into the mine fields or within range of the batteries behind the sand mounds.

Back of the front a great movement of troops continues, and engineers have inundated vast tracts of country which before had been carefully drained by the same officers. In other places the water has been drawn off and redoubts constructed of sandbags surrounding open spaces, the floors of which have been covered with concrete. Does such activity foretell advance or retirement? Perhaps in a few days we shall know.

WALTER LITTLEFIELD.



British Government hospital steamships on the Shat-el-Arab, leaving Busra for India with sick and wounded of the British Tigris army.



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